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Some of the lichens are considered to be closely allied to certain forms of Algæ, and Raspail, in his Organic Chemistry, states his belief that the colours of many marine Algæ may be owing to a peculiar combination of iodine with starch; he also states that he has succeeded in tinging lichens with iodine so that they resembled some Algæ. I am not aware of any of the fungi which contain starch, in such a state, at least, as to afford a blue colour with iodine: now it has been already stated that the same is true regarding *Bœomyces*, and this genus has been considered to make a near approach to the fungi. Sir J. E. Smith compares the fructification of *Bœomyces roseus* to some minute *Helvella*.

XIX.—*Note on a Fossil Ruminant Genus allied to* Giraffidæ *in the Siwalik Hills.* By Capt. P. T. Cautley.*

When we look at the number of species of Proboscidan Pachydermata which swarmed in the primæval forests; when we see that in the present day nature appears to have left but solitary species to attest the gigantic form of primitive existence, the imagination naturally places before our eyes forms of corresponding magnitude in other genera; we picture to ourselves gigantic Ruminants and gigantic Carnivora only to be revealed by the remains which nature has placed in her own keeping to exhibit to inquiring man the wisdom of design and the systematic chain of organization established throughout the whole of the animal kingdom.

Amongst the Ruminants the discovery of the *Sivatherium giganteum* has most amply tended to prove the truth of this induction, exhibiting a ruminating animal bearing the same proportion to the rest of its genus as the Mastodon and Elephant do to that of the Pachydermata. Amongst the Carnivora we have the *Ursus Sivalensis*, an animal far exceeding in

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Having discovered the type of a gigantic Ruminant amongst the fossils of the Siwaliks in company with the remains of the larger Pachydermata, and having at the same time proved the existence of the camel, with other numerous species of the cervine and caprine family of Ruminants, it was not by any means improbable that the present tribe of *Giraffidæ* should have its representative, so that the connexion of the chain of existing and fossil Ruminants might be still more perfect. The discovery of the *Sivatherium* and camel in conjunction, led to the probability of the existence of the giraffe, giving this genus the first position amongst the family of *Cervidæ*. The fossil now to be described appears to throw some light on the subject; and should further research tend to corroborate the contents of this paper, it will be interesting to remark on the co-existence of the Sivatherium, Camel and Giraffe with Quadrumana, Anoplotheria, Mastodons, and reptiles so closely resembling those of the present rivers, that it is not possible to discover, in their osteological pictures at least, any remarkable deviation from the type which has been left to us.

The remain which I wish to describe is the third cervical vertebra: it was cleared out of a block of sandstone, and as is usual in similar cases, is very perfect in all its parts and proportions, and sufficiently armed with processes for the pur-

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pose of recognition and comparison. The dimensions are as follows:

Length in the barrel	7·8 inch.
Breadth in centre ditto	1·7 —
Depth ditto ditto	2·2 —

There are marked differences between this fossil and the corresponding vertebra of the existing camel, and in comparing them together the following appear to be the most worthy of notice.

In the fossil the oblique processes are much shorter and stouter than those of the camel, with articulating surfaces at a greater angle: the barrel of the vertebra is much longer: the hollows or depressions which appear directly under the anterior oblique processes, and the ridges radiating from the extremity of the spinous process towards the expanded surface of the posterior oblique processes so well marked in the camel, are altogether wanting in the fossil; the upper surface, with the exception of the spinous process, being altogether flat and unmarked.

On the inferior or lower side of the vertebra there is also a considerable difference, that of the camel being much curved and hollow, uninterupted by ridge excepting in the vicinity of the posterior extremity, where there is a knob or round process: in the fossil this knob is wanting, but in its place there exists a well-defined sharp ridge from one extremity to the other. The transverse processes of the fossil are imperfect, but the form and angle of departure from the barrel of the vertebra differs from those of the camel.

The foramina for the transmission of the vertebral artery are well defined in the fossil, the space between the entrance and exit occupying the central third portion of the whole length; a prominent well-defined ridge runs obliquely across the plane of the side, connecting the upper anterior oblique process with the lower and posterior extremity of the transverse process; a very marked peculiarity, which, with the position of the foramina, separates the fossil from the camel.

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